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First Steps IN Numerography

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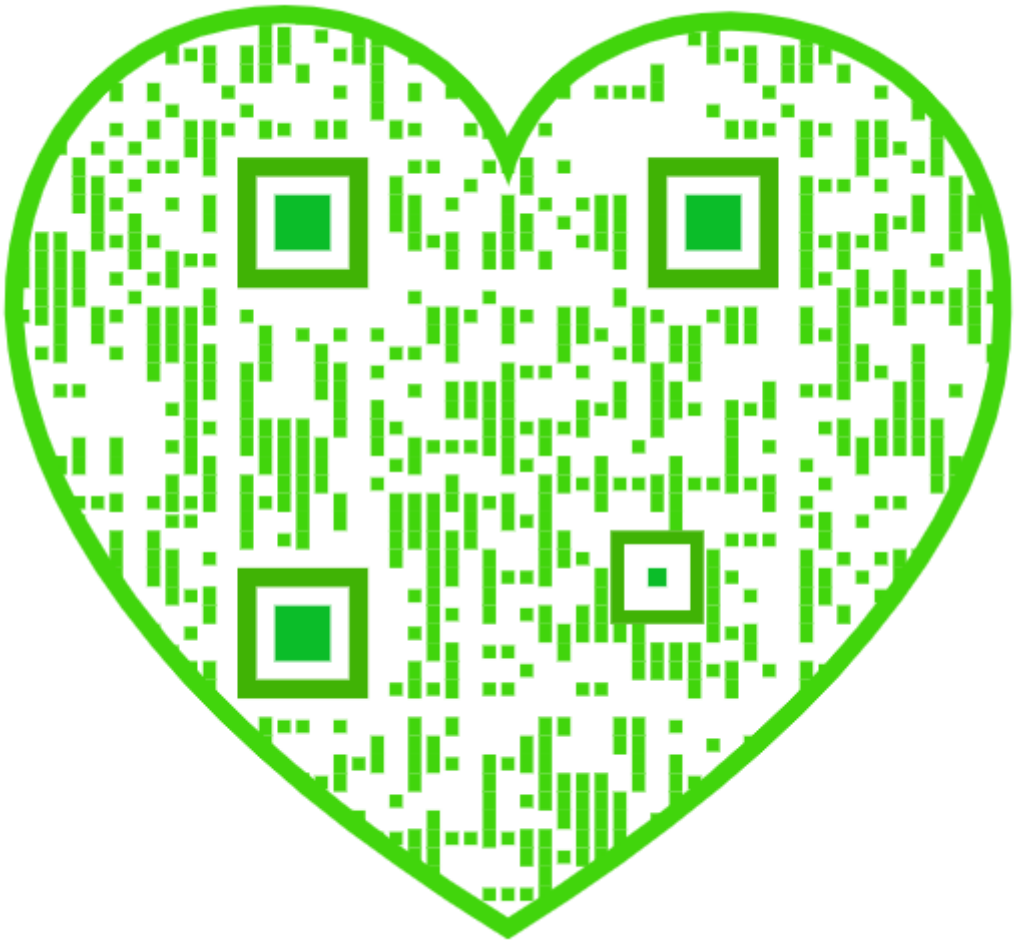

DEPARTMENT OF AGRICULTURE.

VITICULTURAL STATION, RUTHERGLEN, VICTORIA.

FIRST STEPS IN AMPELOGRAPHY:

A GUIDE TO FACILITATE THE RECOGNITION OF VINES,

BY

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INTRODUCTION.

NOTES ON THE DETERMINATION OF CÉPAGES.*

A long association with vines enables any one to acquire, in a given district, a visual recollection of the most common varieties, or "cépages." This visual recollection is preferable to the best description. It is due to the physiognomy of a variety becoming engraved on the memory, and serving as a means of comparison. This physiognomy of a vine is the general result of the impression caused by the union of its separate characters. But, more often than not, these particular or separate characters, not having been examined individually with sufficient attention, escape from the memory. From their assembled characteristics a special appearance proper to each cépage results, which in most cases is sufficient to serve as a guide.

This method of determination is the result of unconscious discrimination. Vine-growers easily recognise at first sight the varieties amongst which they live, such a method of observation has a close analogy to that which enables a shepherd to recognise individual sheep in his flock. It is recommendable, but presents, however, serious difficulties. First, it demands a long time to acquire; and second, can only apply to a given district or region. Climate, cultural proceedings, and method of training, all tend to modify the appearance of a vine, and may even render it unrecognisable. An Aramon vine growing in the plains of the Hérault (South of France) will differ in appearance from the same vine when cultivated

* This word is used as it has no true equivalent in the English language. It is usually translated as *variety*; this, however, does not convey the real meaning, as it may be applied to a species, variety, variation, hybrid, or metis. (Trans.)

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in a cooler region. The various systems of pruning and training also accentuate the differences in the aspect of a vine. All these changes greatly diminish the advantage of a recollection of the general physiognomy. It is therefore necessary to seek for more rapid means, permitting the formation of the visual image of a variety in the mind to be hastened, capable of furnishing a control to the first unconscious impressions.

The method which seems indicated at first sight, is the study of the lengthy descriptions given in general works on ampelography. These works, as is commonly known, enter into details with minute exactitude. But they require a certain initiation, and the scientific pre-occupation of the authors gives an impression of dryness to beginners.

There is another means in actual use in several Schools of Viticulture in Europe, where students are encouraged to visit labelled collections of vines every day. Thanks to these collections, students can now, in the course of a single summer, learn to recognise most varieties. They arrive at this result by examining every week, if not every day, the varieties indicated to them by the teacher, who explains the partial characters. In other cases, when the characters are not given by the teacher, the students are required to find, without assistance, the salient and distinctive features. Once possessed of these characters, they very soon learn to recognise almost all the American stocks, and some of the European vines. After this, it is simply a question of frequency of visits to the collection of vines.

This method leads to a final result comparable to that obtained by the vine-grower after many years' sojourn amongst his vines. But the course pursued is quite inverse. The vigneron waits till the impression forms in his mind, and it is only accidentally that he is able to pass from the general characters to details. In the case of the student, on the contrary, it is the special points which at first attract

his attention, and rapidly contribute to form a general impression. These special points also enable the student to pass, from the first impression, to the determination of characters peculiar to each organ of the vine.

It is indispensable that special characters, whether indicated by the teacher or gathered by the student from an examination of the cépage, should be entered in a note-book. This is a valuable aid to the memory, and subsequent visits to the vines enable the number of these characters to be increased, or to usefully modify those which were first written down.

These partial characters must never be neglected. To forget them may lead to grave mistakes. As a matter of fact, after having seen a particular cépage several times, one is able to recognise it at first sight, for at this moment the visual image commences to fix itself on the memory. A tendency to think that the cépage will always be recognised, because it has been recognised once, commences to assert itself. The partial characters become disregarded or forgotten. The certainty of being able to distinguish a cépage without any definite control constitutes a risk which may lead to gross errors. To identify a cépage without being able to give the reason is not sufficient. It is absolutely necessary, to act precisely, to be able to state definitely how it is recognised.

A note-book may be lost, or one may even forget to take notes. This little guide only aims at replacing the note-book.

General Aspect.—The spreading, bushy, or more or less erect habit of a vine is an excellent indication. The first point of verification must not be neglected whenever the mode of culture permits its observance. Amongst a collection of American and European vines, cultivated without stakes or trellis, it is easy, by the observation of this particular, to effect a preliminary classification.

For instance, in a vineyard planted with Aramon, Carignane, and Mataro, it is possible by this means to recognise these three varieties. The Aramon is spreading, the Mataro very erect, and the Carignane is intermediate in habit between the Aramon and Mataro.

The general colour also furnishes useful indications. When looking out of a railway carriage it is easy to distinguish, amongst Aramon or Carignane, blocks of Jacquez or Petit-Bouschet (Tinto). The Jacquez forms a sombre green patch, while the Petit-Bouschet appears of a violet-green colour, as if the vines had been plunged into a bath of dye.

These characters, as well as others, seen from a distance, and resulting from the colour, general dimensions, and state of the surface of the leaves (shining or downy), only serve to create an impression.

Wood.—The autumn (ripe) wood affords precise characters. The Riparia wood is easily distinguished from that of Rupestris or Berlandieri. And in a given species it is easy to recognise different varieties by an examination of the autumn canes. The wood of Riparia Gloire is very distinct from that of Riparia Violet. The wood of Grenache does not resemble that of Chasselas. But the characters observed in the appearance of the wood always present a difficulty. The variations have too small an amplitude. These characters are useful in the differentiation of one species from another, and in a given species to facilitate the recognition of varieties in which the appearance of the autumn canes differs in regard to one another. But, to mention one instance, how can we distinguish the wood of Riparia Grand Glabre from that of another Riparia with red wood? This reproach may be addressed to ampelography in general. But if it is true in the case of leaves and grapes, it is even more so in the case of the canes.

Other inconveniences may be added to this difficulty. Winter is not a season for strolling amongst vines. It is often necessary to examine wood that has been cut for some time and stratified in sand, and therefore of modified colour. The colour of ripened wood varies sensibly according to the nature of the soil the vine is grown in. The wood of Riparia Gloire cultivated in fertile alluvial plains, where the growth is very strong, has not the same colour as the wood of the same Riparia cultivated in clay soils or on poor and dry hills.

To ascertain that the colour is variable is sufficient to be on guard against the first impression, and necessitates attentive regard to other more constant characters than colour, before asserting that the wood under observation belongs to a particular variety.

Tendrils.—The character drawn from the continuity or discontinuity of the tendrils is of remarkable fixity. The Vitis Labrusca is the only species with continuous tendrils. However, the continuity is not absolute. It is rare, on the contrary, not to find a few interruptions on each cane, especially in proximity to the point of insertion, where the tendrils are invariably absent.

The disposition of the tendrils of Labrusca hybrids is intermediate between those of Vitis Labrusca and those of other Vitis. According to the degree of relationship the interruptions are rare or frequent. For example, the Vialla has tendrils almost as continuous as those of V. Labrusca.

Buds at the First Start of Growth.—The appearance of the budding of certain species is very distinctive, but differs only slightly between the varieties of a given species. The evolution of the young buds is so rapid that the modifications are produced at short intervals. The distinctive characters at that period of growth are slight and very variable. This difficulty lasts until the leaves have attained their final dimensions.

The verification of the precocity of bursting of the buds may, in certain circumstances, be a useful indication.

Leaves.—The leaves of different varieties may, in most cases, be distinguished from one another. It sometimes happens that the leaves of a given cépage present partial resemblances, in regard to shape, texture, and pubescence, to those of another cépage, but the coincidence of all these characters is not frequent.

At the end of May,* the leaves possess characters which are maintained without much modification till autumn. They may therefore be studied during the whole summer. This contributes, in a great measure, to the possibility of distinguishing the cépages.

Upper Portion of Growing Shoot.—This denomination is applied to the portion of the shoot in a state of active growth, comprised between the free extremity and the point where the young leaves have attained, more or less, one-third of their normal development. The characters drawn from this are excellent. They always serve as a direct control of the observation made by means of the leaves. These characters disappear naturally when the active growth ceases.

Grapes.—When eating a Chasselas grape, we do not suppose for a moment that it is a Berlandieri grape or the product of any of the new hybrids; we may, therefore, use the grape as an excellent ampelographic character. But grapes, when they have arrived at maturity, do not remain long on the vine, as they are gathered at that moment. Again, to speak only of one group, a black spherical berry resembles very closely another black spherical berry, and they are legion in each group. Slight variations in colour and size are difficult to detect. The general shape of the

* About November in Victoria. (Trans.)

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bunch and the colour of the stalk are not in most cases very distinctive characters. There is also the taste peculiar to each grape, but how describe it? When we say that the Cabernet grape has a special taste, it is not giving precisely a rigorous description. However, it is well to draw attention to the taste of grapes, as it contributes to the recognition of the cépage producing them.

The difficulties indicated above of distinguishing cépages by means of ripe grapes is still greater if they are studied while green. Finally, all cépages are not fructiferous.

Vines Cultivated in Nurseries.—The shoots growing from cuttings, or grafted cuttings, the first year of planting in nurseries have not exactly the same characters they attain later on. Independently of the diminution in the dimensions of the leaves, there are often other modifications. We will mention as an example the leaves of Carignane. These leaves, when the Carignane is grafted on American stock, retain their normal shape, but are very smooth, and only become wrinkly or uneven very slowly.

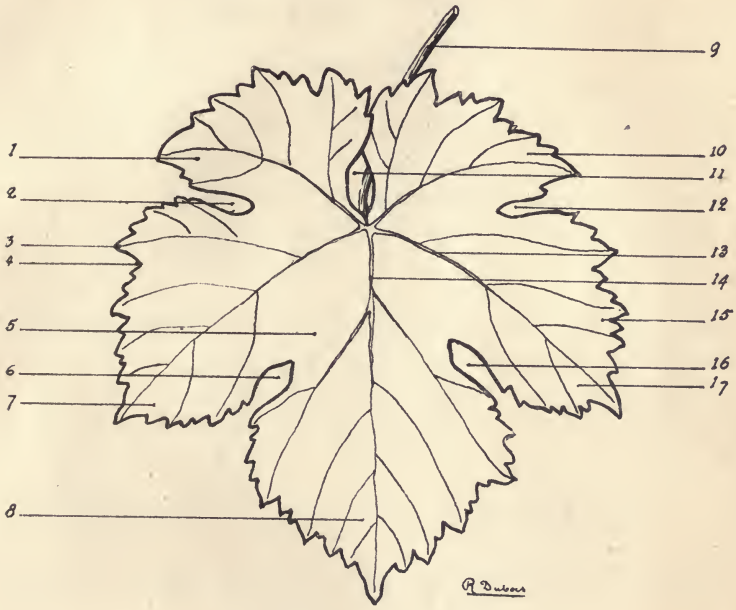
Influence of the Fertility of Soil.—The soil, accordingly as it is arid or fertile, dry or moist, modifies the general habit of a vine; but the alterations only affect the relative dimensions of the organs and their colour. Severe drought often causes the leaves to become shrivelled.

Good Advice.—Before going into a vineyard, inquire as to the cépages cultivated. Generally, even if extensive vineyards, they only contain a small number of varieties. Under these conditions we have in advance an idea as to the nature of the cépages cultivated, and their determination will be very greatly simplified. The difficulty does not consist in distinguishing Aramon from Carignane or Petit-Bouschet, when we know that a vineyard is composed of these three cépages, but in distinguishing these three cépages in a vineyard where their presence is not expected.

Method of Proceeding to Verify the Authenticity of a Cepage.—Examine, in the following order, the characters drawn from the principal organs of the vine:—

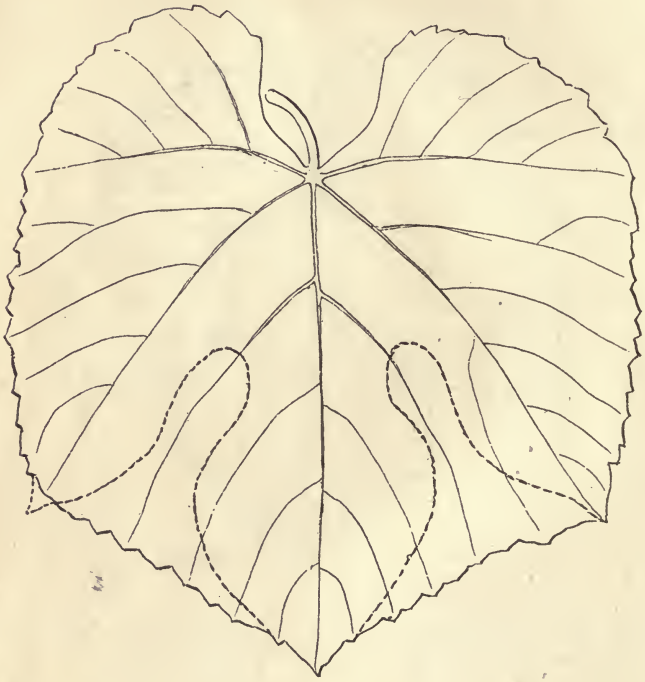
General aspect.
Tendrils.
Wood.
Leaves.
Upper portion of growing shoot.
Grapes.

BOTANICAL FEATURES OF A VINE-LEAF.



1. Left superior lateral lobe.
2. Left superior lateral sinus.
3. Tooth.
4. Indentation.
5. Limb.
6. Left inferior lateral sinus.
7. Left inferior lateral lobe.
8. Inferior lobe, or terminal lobe.
9. Petiole or peduncle.
10. Right superior lateral lobe.
11. Petiolar sinus.
12. Right superior lateral sinus.
13. Secondary vein or sub-rib.
14. Mid-rib or principal vein.
15. Margin.
16. Right inferior lateral sinus.
17. Right inferior lateral lobe.

ÆSTIVALIS (Vitis).



The dotted line indicates the most frequent indentation. The drawing represented by simple ribs indicates that the leaves are plane, or only slightly wrinkled. The figures are generally reduced to half size.

Æstivalis (Vitis).

AMERICA.

LEAVES.—*Upper face*, **dull**, rugose, slightly wrinkly and uneven.

Under face, more or less covered with short **rust-coloured** down, but never forming a dense felt.

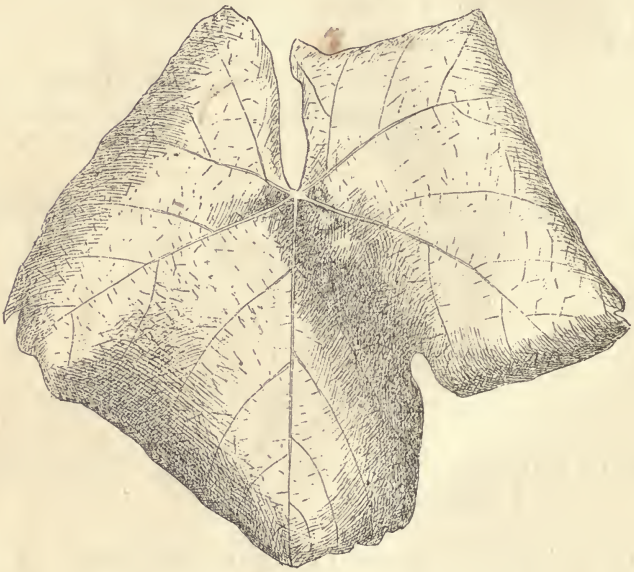
UPPER PORTION OF GROWING SHOOT.—**Carmine colour.** At the start of growth, before the shoots exceed 20 c.m. (8 in.) in length, the whole herbaceous part is of a carmine colour.

GRAPES.—Taste resembling that of V. Vinifera.

WOOD.—Deep red colour when lignified. General aspect resembling V. Vinifera.

The V. Æstivalis is widely cultivated in France. It has given rise to a number of natural and artificial hybrids, such as Jacquez, Herbemont, Cynthiana, Rupestris × Æstivalis, Azema, &c.

ALICANTE-BOUSCHET.



Alicante-Bouschet.

VITIS VINIFERA.—EUROPE.

LEAVES.—Entire or irregularly indented, rounded, purple-red colour in autumn, partially purple tinted at the end of summer, **margins strongly curled underneath.**

Upper face, smooth and **glossy.**

Under face, covered with a very light white felt.

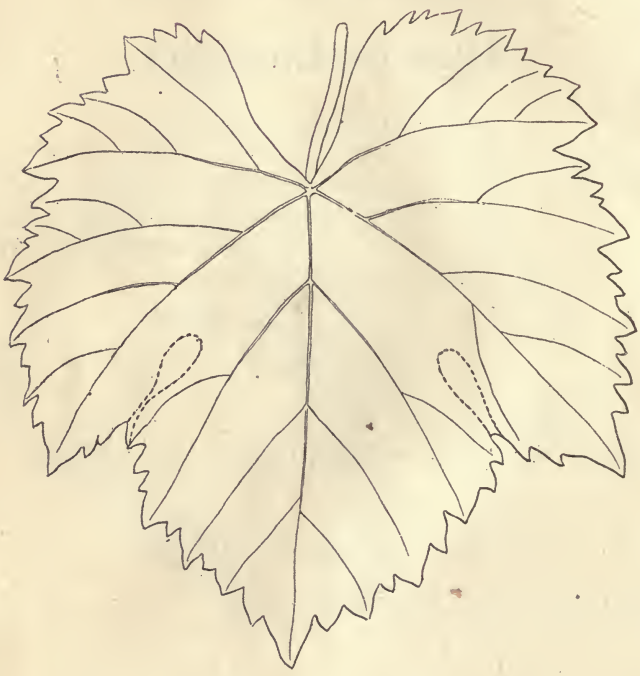
UPPER PORTION OF GROWING SHOOT—

Apex whitish.

Young leaves bronzed, very glossy.

GRAPES.—Deep red juice.

ARAMON.



The dotted line indicates the most frequent indentations. The petiolar sinus is often more open than that which is represented in the above figure.

Aramon.

VITIS VINIFERA.—EUROPE.

HABIT.—Spreading.

LEAVES.—Entire or trilobed, light-green, slightly uneven, rather thin and supple.

Under face, covered with a loose down of very variable intensity, but more often than not rather light.

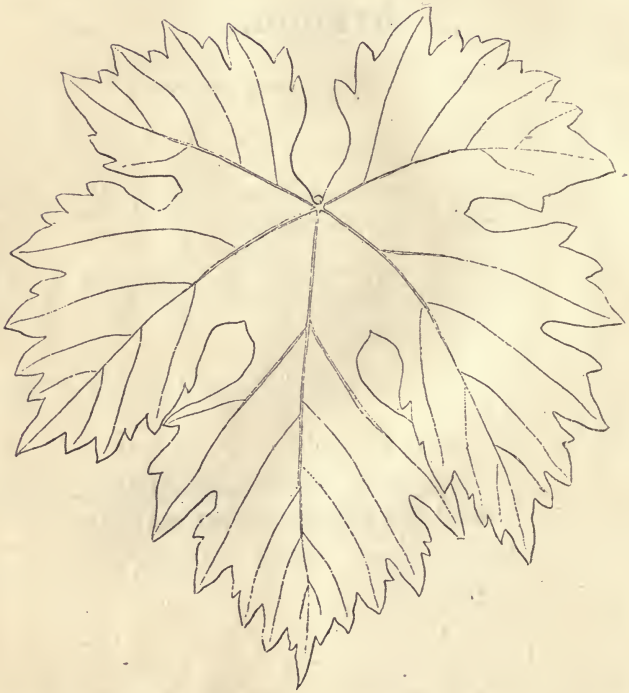
Petiolar sinus, **open V** and regularly formed.

BUNCH.—Very large, elongated.

Peduncle **very brittle, remaining herbaceous until the grape reaches maturity.**

Berries loose before turning, very large, spherical.

ASPIRAN.



Aspiran.

VITIS VINIFERA.—EUROPE.

LEAVES.—**Deeply indented,** regular, slightly undulating.

Teeth **sharp,** neatly cut.

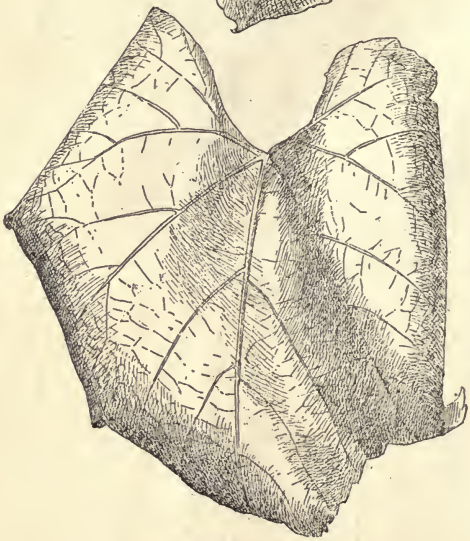
UPPER PORTION OF GROWING SHOOT.—Very bronzed.

Apex slightly whitish.

BERRIES.—Ovoid.

BERLANDIERI (Varieties).

No. 2.



No. 4.

Berlandieri (Vitis).

AMERICA.

LEAVES. — Entire, emarginate,* thick, stiff, **hard, relatively glossy** on both faces, deep green. Woolly down, patchy or disseminated on the whole surface of the limb, and forming tufts at the point of division of the veins on the upper face. **Stiff hair on veins and sub-veins of under face.**

Teeth very short or blunt.

BUDS.—Grey-ashy-violet.

UPPER PORTION OF GROWING SHOOT.—**Bronzed or golden colour.**

WOOD.—**Hazel-grey** or reddish-grey, with **prominent ribs,** except on large canes; disseminated **fluffy** hair.

BUNCH.—Rather large, elongated.

Peduncle, **very strong,** ligneous, deep red.

Berries, very small.

Period of florescence, **very late,** three weeks to one month later than most other species.

* Emarginate, when speaking of leaves, means that in entire leaves the limb becomes narrow suddenly below the two teeth forming the two lateral lobes. (See figures of the Berlandieri group No. 1 and No. 3.)

BERLANDIERI (Varieties).

No. 3.

No. 1.

Berlandieri (Varieties).

VITIS BERLANDIERI.—AMERICA.

Group No. 1.

LEAVES.—Bright green, large, **elongated,** the lateral margins often **parallel,** often folded along the mid-rib, **smooth** and relatively thin.

Tomentum slightly abundant.

UPPER PORTION OF GROWING SHOOT.—

Young leaves, **golden-yellow, gradually passing to the definitive colour.**

Apex ashy, light carmine.

WOOD.—Hazel colour.

Group No. 2.

LEAVES.—**Deep shining green,** as if varnished on the upper face, **rounded,** thick, **margins largely undulating,** often folded conically. Tomentum more abundant than in Group No. 1. Teeth very blunt.

UPPER PORTION OF GROWING SHOOT.—

Young leaves, bronze-violet-ashy, **becoming strongly bronzed, and passing suddenly to the definitive colour.**

Apex whitish, light carmine.

WOOD.—Reddish-grey, strongly striated.

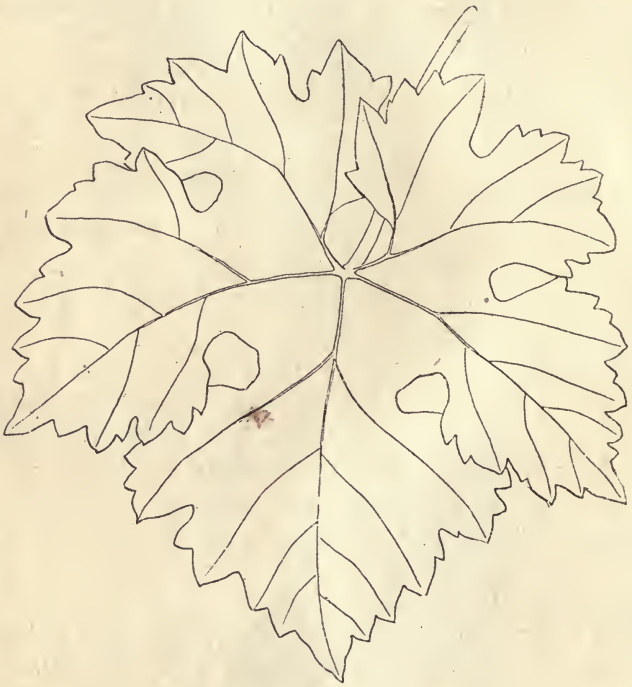
Group No. 3.

LEAVES.—Large, rough, **wrinkly** along the principal veins. Veins **vinous red,** especially near the point of insertion on the under face. Teeth very blunt. Petiolar sinus almost closed.

Group No. 4.

LEAVES.—Folded along the mid-rib, margins strongly **revolute** underneath, very glossy.

CABERNET-SAUVIGNON.



Cabernet-Sauvignon.

VITIS VINIFERA.—EUROPE.

LEAVES.—Five-lobed, **sinuses rounded, sides of the sinuses almost always overlapping,** the leaf appearing as if pierced with five holes.

UPPER PORTION OF GROWING SHOOT.—Bronzed.

GRAPES.—Very special taste, known as Cabernet taste.

CALITOR.

Calitor.

VITIS VINIFERA.—EUROPE.

LEAVES.—**Large, strongly undulating,** often wrinkly, deeply indented.

Under face, white felt.

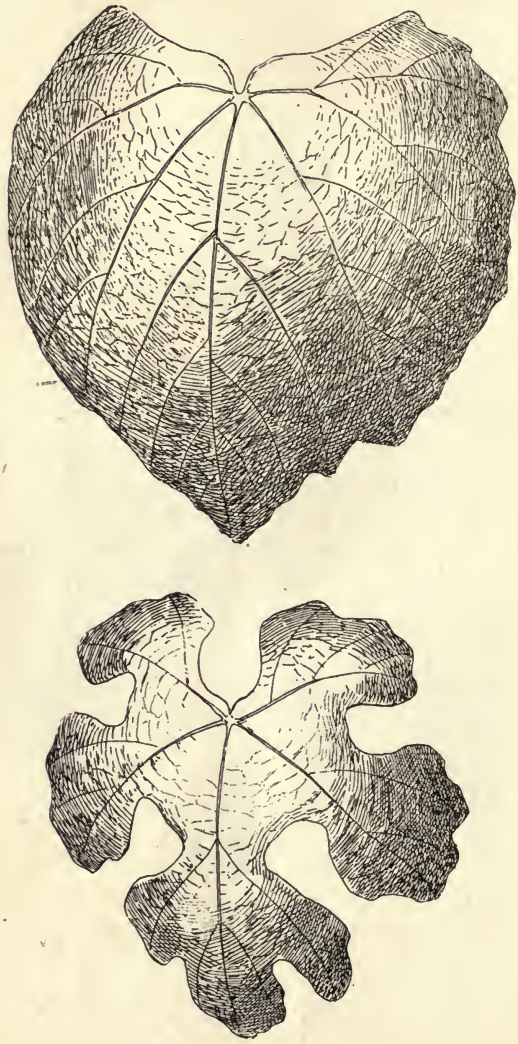
Petiolar sinus, sides often bent at a right angle.

Teeth sharp.

BUNCH.—*Peduncle* **sharply bent at two or three centimetres from the point of insertion;** tendrils generally abortive, forming a spur on the bend of the peduncle ; a callosity at the external angle of the peduncle.

Berries ovoid.

CANDICANS (Vitis).



Candicans (Vitis).

AMERICA.

LEAVES.—Entire or lobed, limb **convex** on the upper face.

A very white thick felt covers the apex of the growing shoots and the under face of the leaves. This felt remains on the ripened wood, without, however, covering the whole surface.

CARIGNANE.

Carignane.

VITIS VINIFERA.—EUROPE.

HABIT.—Erect.

LEAVES.—**Large, deeply indented, very strongly honeycombed in structure and wrinkly in the centre,** deep green.

Under face, light felt.

WOOD.—Very hard, nodes very close at the base of the cane.

CHASSELAS.

The terminal lobe is often more developed than represented in the figure.

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Chasselas.

VITIS VINIFERA.—EUROPE.

LEAVES.—Irregular, terminal lobe much developed, **glabrous on both faces,** margins generally curled underneath, **leaden colour,** dull, mottled yellow in autumn, never purple.

Teeth blunt.

Petiolar sinus, sides rejoining and almost parallel.

UPPER PORTION OF GROWING SHOOT.—**Bronzed, very glossy,** apex without tomentum. Young leaves passing from a very bright bronze colour to yellow, often mottled before assuming the definitive colour.

BERRIES.—Always spherical.

The Chasselas are numerous; they are essentially characterized by the leaden colour of the leaves, the absence of tomentum, and the bronze colour of the growing apex. The varieties with white, golden, or feebly-coloured berries, such as pink Chasselas of Po, for example, have leaves with whitish-green veins, slightly or not violet-coloured. The varieties with violet berries, on the contrary, have leaves with strongly violet-coloured veins.

CINEREA (Vitis).

Cinerea (Vitis).

AMERICA.

LEAVES.—Cordiform-emarginate, **flabby, dull, limb finely wrinkled (like crepe) between the sub-veins.**

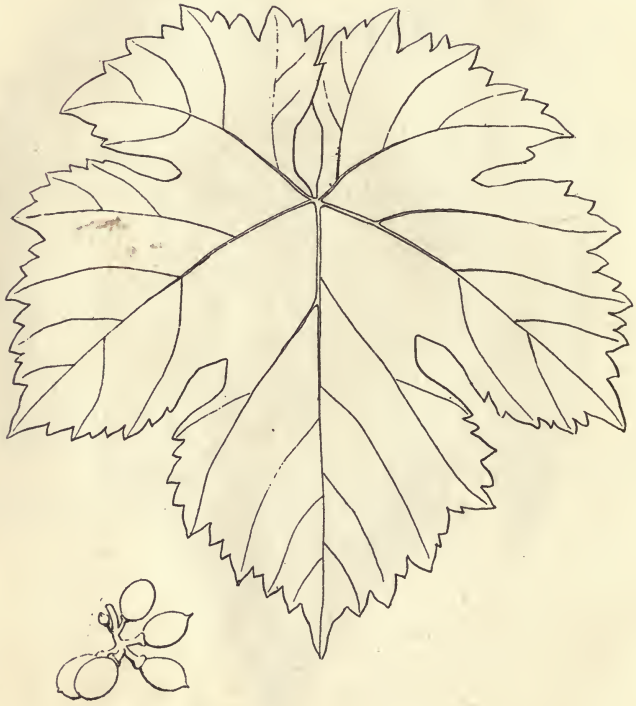
Teeth very blunt.

BUDS.—Grey-ashy-violet.

UPPER PORTION OF GROWING SHOOT.—Bent, white ashy colour, tinted with carmine.

WOOD.—**Prominent ribs,** large canes excepted, greenish-grey with violet stripes before lignification, afterwards grey.

CINSAUT.



Cinsaut.

VITIS VINIFERA.—EUROPE.

LEAVES.—**Perfectly regular**; this is the "**classical**" **leaf.**

BERRIES.—Ovoid, pointed before turning.

CLAIRETTE.

Clairette.

VITIS VINIFERA.—EUROPE.

LEAVES.—*Upper face*, **very deep green, dull.**

Under face, **white, rather compact felt.**

Petiolar sinus, completely closed, **sides of the two lobes largely overlapping.**

UPPER PORTION OF GROWING SHOOT.—

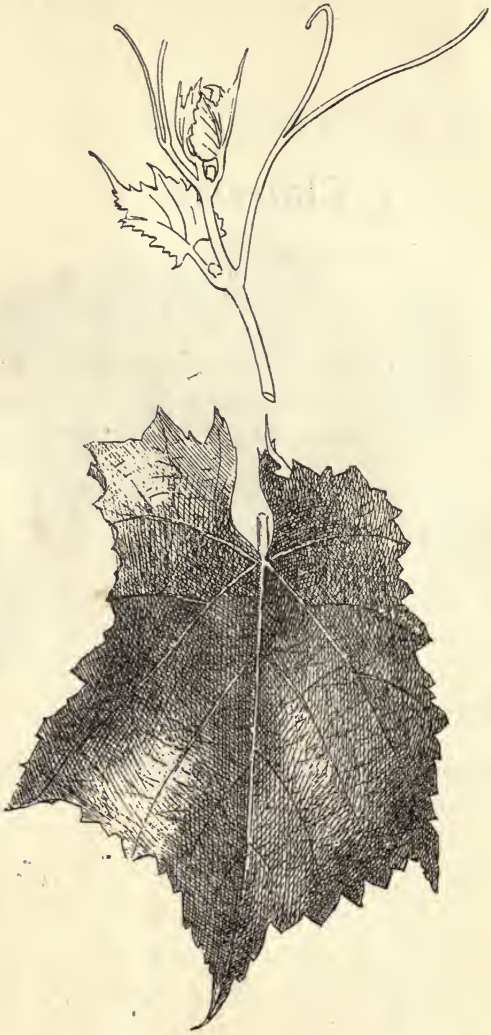
Apex white.

Young leaves, yellowish on the upper face, covered with a dense white felt on the under face.

BERRIES.—Small, ovoid.

The Clairette is the most tomentose of the cépages belonging to V. Vinifera.

CLINTON.



With vigorously growing shoots, the apex is more bent than that represented in the above figure.

Clinton.

HYBRID OF V. RIPARIA, V. RUPESTRIS, AND V. LABRUSCA.—AMERICA.

LEAVES.—Entire, **relatively small,** always **more or less folded along the mid-rib, or conically,** margins largely undulating.

Under face, stiff hair on veins.

UPPER PORTION OF GROWING SHOOT.—

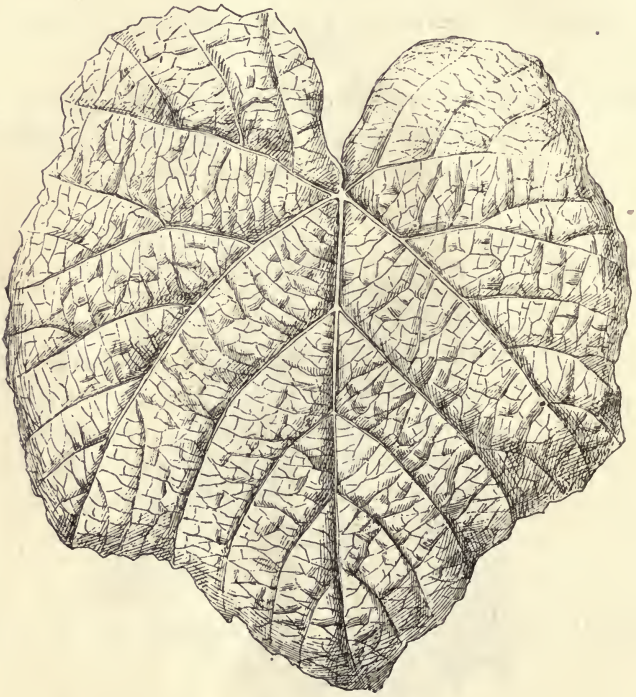
Apex bent.

Very young leaves, slightly whitish, folded along the mid-rib, but never completely enveloping the terminal bud. When the shoot is very vigorous the outer edge of very young leaves is bordered with a light pink strip.

Scales, before drying, slightly pink.

WOOD.—Numerous secondary ramifications, of bushy aspect.

COIGNETIÆ (Vitis).



Coignetiæ (Vitis).

FAR EAST.

LEAVES.—**Very large, rounded, deep green, dull rugose, limb wrinkled between the secondary veins.**

Under face, light tissue of loose down, **rust coloured**, veins carmine for the first third of their length.

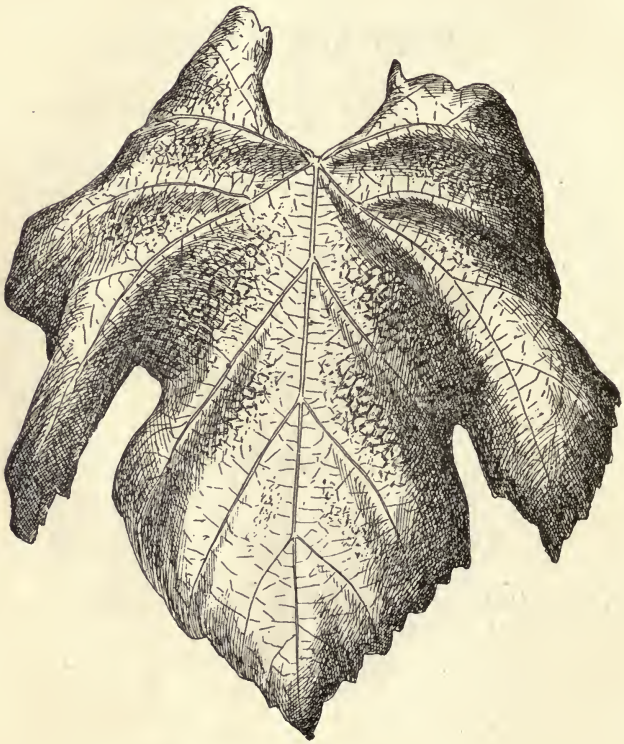
Teeth very short, and bent underneath when adult.

UPPER PORTION OF GROWING SHOOT.—Rusty, whitish.

Apex slightly carmine.

WOOD.—Rusty down covering herbaceous canes.

CONCORD.



Concord.

VITIS LABRUSCA.—AMERICA.

LEAVES.—**Very large,** flabby, irregular, entire or largely trilobed, limb hanging on the edges and depressed between the **principal veins.***

Upper face, deep green, dull.

Under face, **russet felt, thick.**

Petiolar sinus, **very open.**

UPPER PORTION OF GROWING SHOOT.—

Apex brown-red, outer edge carmine.

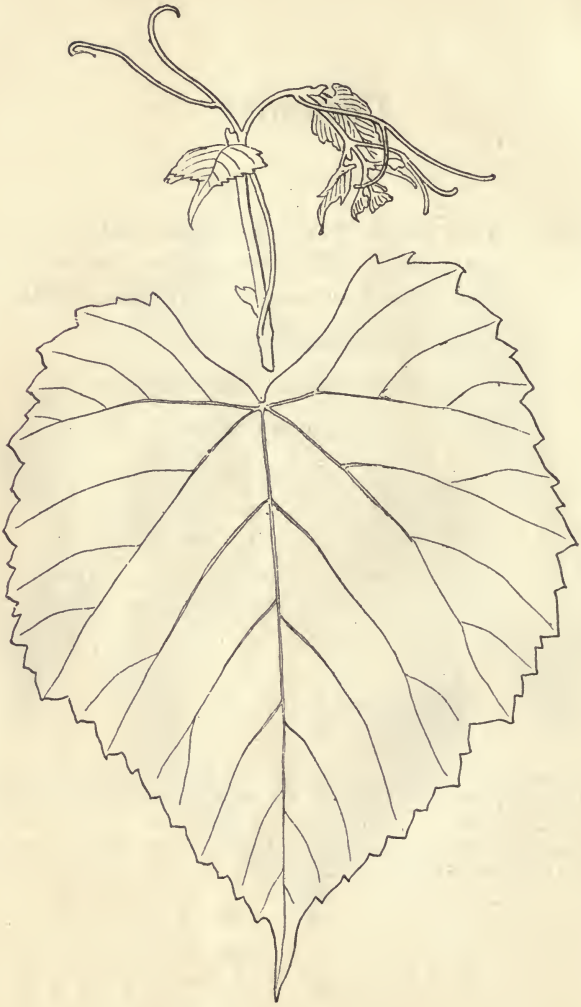
Young leaves yellowish bronze, dull on the upper face, dense **nacreous white** felt on the under face.

TENDRILS.—**Continuous.**†

* This character is only apparent on leaves borne during the most active period of growth, or, what comes to the same thing, on leaves having the greatest development.

† When nothing is mentioned about tendrils in the cépages described it means that they are *discontinuous.*

CORDIFOLIA (Vitis).



The leaves of Cordifolia are not always as regularly cordiform as represented in the above figure. They are sometimes emarginate.

Cordifolia (Vitis).

AMERICA.

LEAVES.—**Cordiform, very glabrous, very smooth, shiny on both faces,** sometimes the margins are curled underneath.

Teeth short.

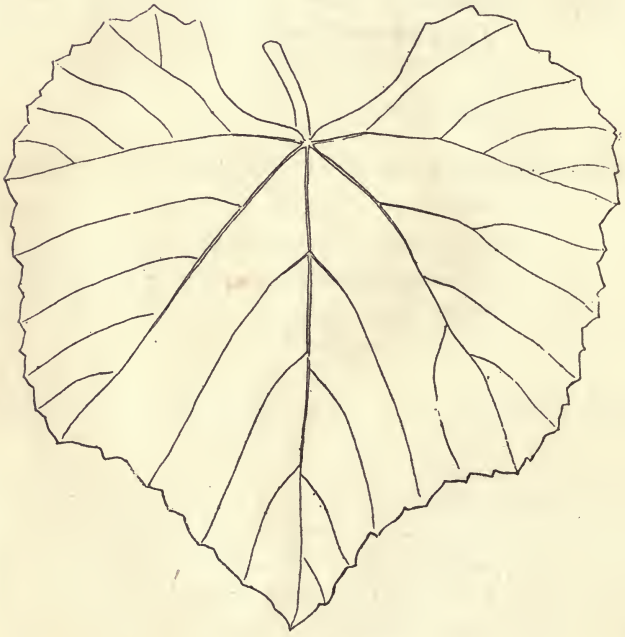
UPPER PORTION OF GROWING SHOOT.—Glabrous, bent.

Young leaves, **very shiny,** golden green or bronzed, **opening out flat almost from the start,** and showing the terminal bud completely uncovered.

WOOD.—Smooth, shiny, brown punctuations disseminated on the herbaceous shoots.

This species may be considered as one of the most glabrous. However, occasional woolly hairs may sometimes be found on the apex of the growing shoot. There are also occasionally a few stiff hairs on the lateral sides of the veins, in proximity to their point of division, on the under face.

CORIACEA (Vitis).



Coriacea (Vitis).

AMERICA.

LEAVES.—Cordiform, short, emarginate, **plane,** thick.

Under face, **white felt on the limb, rusty felt on the veins.**

Petiole covered with rusty felt.

UPPER PORTION OF GROWING SHOOT.—

Rusty white, spots of carmine on the extreme apex of the tendrils.

WOOD.—Regularly cylindrical and even.

CUNNINGHAM.

Cunningham.

HYBRID OF V. VINIFERA, V. ÆSTIVALIS, AND V. CINEREA.—AMERICA.

LEAVES.—**Very large, entire,** emarginate, **deep green.**

Under face, light white felt.

UPPER PORTION OF GROWING SHOOT.—

Bent in form of a crook, **white,** with **slight carmine border,** interrupted around leaves and apex.

DAVIDI (Vitis).

Davidi (Vitis).

FAR EAST.

LEAVES.—**Cordiform, very thick, varnished.**
Petiole **thorny.**

WOOD.—**Thorny,** like a blackberry.

ESPAR (Mataro).

Espar (Mataro).

VITIS VINIFERA.—EUROPE.

HABIT.—**Very erect.**

LEAVES.—**Entire,** sometimes trilobed, **almost plane.**

Under face, numerous tufts of white, loose hair.

UPPER PORTION OF GROWING SHOOT.—

Yellowish white.

Young leaves, slightly bronzed on the upper face, dense white felt on the under face.

GRENACHE.

Grenache.

VITIS VINIFERA.—EUROPE.

HABIT.—Erect.

LEAVES.—Shiny, **extremely glabrous on both faces,** sub-veins sunk into the limb, parchment like, texture similar to Rupestris, generally trilobed, **strongly and largely undulating,** veins yellowish-green, never violet-coloured.

UPPER PORTION OF GROWING SHOOT.—Green-yellowish, **very shiny.**

WOOD.—**Yellow after lignification.**

BERRIES.—Ovoid.

HERBEMONT.

The Herbemont leaves are often five-lobed ; the dotted lines indicate the most frequent indentations.

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Herbemont.

HYBRID OF V. VINIFERA, V. ÆSTIVALIS, AND V. CINEREA.—AMERICA.

LEAVES.—**Stiff,** thick, sometimes depressed in the centre, limb slightly wrinkled between the sub-veins, inferior sinuses largely open, **brightly green.**

Under face, **stiff very numerous hairs on veins, rusty-coloured loose hair** slightly abundant on limb.

UPPER PORTION OF GROWING SHOOT.—

Bent in hook shape, **apex bordered with carmine.**

Young leaves, **golden yellow,** slightly **bronzed.**

WOOD.—Bluish bloom before lignification, principally near the nodes.

The Herbemont resembles Jacquez ; most of the characters mentioned are distinctive characters between the two cépages.

JACQUEZ.

Jacquez.

HYBRID OF V. VINIFERA, V. ÆSTIVALIS, AND V. CINEREA.—AMERICA.

LEAVES.—**Deep green, flabby,** margins pendant. Extremities of the three inferior lobes often wither away towards the end of summer giving the Jacquez leaf the appearance of a fig leaf, on account of the rounding of the lobes due to the disappearance of a number of teeth.

Under face, **veins without stiff hair,** excepting the leaves at the base of the cane, and even in this case the hairs are always scarce ; **tufts of white loose hair** disseminated on the limb.

UPPER PORTION OF GROWING SHOOT.—

Bent in the form of a crook; very young leaves **carmine** around the margin, and often on the greater part of the upper face ; young leaves **never bronzed,** slightly yellowish, passing rapidly to light-green before assuming the definitive colour.

WOOD.—Deep red after lignification.

LINCECUMII (Vitis).

The dotted lines indicate the indentations of certain leaves.

Lincecumii (Vitis).

AMERICA.

LEAVES.—Margins slightly curled backwards.
Under face, **glaucous.**

UPPER PORTION OF GROWING SHOOT.—
Apex whitish, more or less carmine.

BERRIES.—**Discoid.**

MONTICOLA (Vitis).

Monticola (Vitis).

AMERICA.

LEAVES.—Small, thick, **parchment like, very shiny** on both faces, **margins always undulating, and often curled upwards.**

Teeth neatly cut (sharp), **divergent,** wide, short without being rounded.

Petiole **covered with hair, lying flat.**

WOOD.—Before lignification **covered with hair, lying flat;** after lignification reddish-brown, often finely cracked; secondary ramifications numerous.

The diverse forms of this species are distinguished by the dimension, thickness, and colour of their leaves, the more or less abundant hair, lying flat, on the herbaceous shoots, and by the colour of the ripened wood, which varies from red to brown-greyish. Certain varieties have slightly uneven leaves; others have leaves with margins very strongly curled upwards.

MUSCAT.

Muscat.

VITIS VINIFERA.—EUROPE.

LEAVES.—Regular, **bright green, glabrous, teeth sharp, clean cut**; small teeth distributed around the teeth situated at the prolongation of the veins.

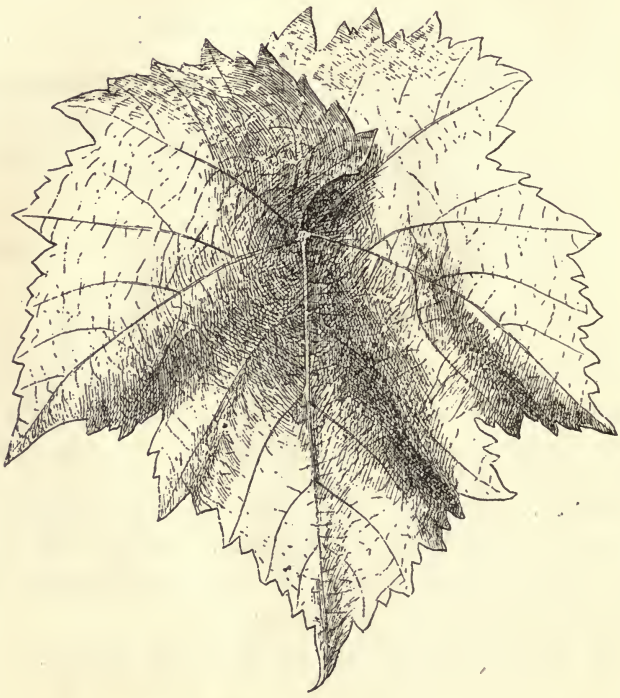
UPPER PORTION OF GROWING SHOOT.—**Bronzed,** shiny.

Apex **slightly whitish.**

The Muscats constitute a rather homogeneous group, characterized essentially by the taste of the grapes. Independently of the grapes, the dentation of the leaves and the bronze colour of the growing apex enables them to be distinguished. The slight pubescence of the leaves* gives them a certain resemblance to Chasselas. But the Chasselas leaves are of a leaden colour, the teeth more rounded, and the growing apex is never whitish.

* The Muscat of Hamburg is less glabrous than other Muscats.

OTHELLO.



Othello.

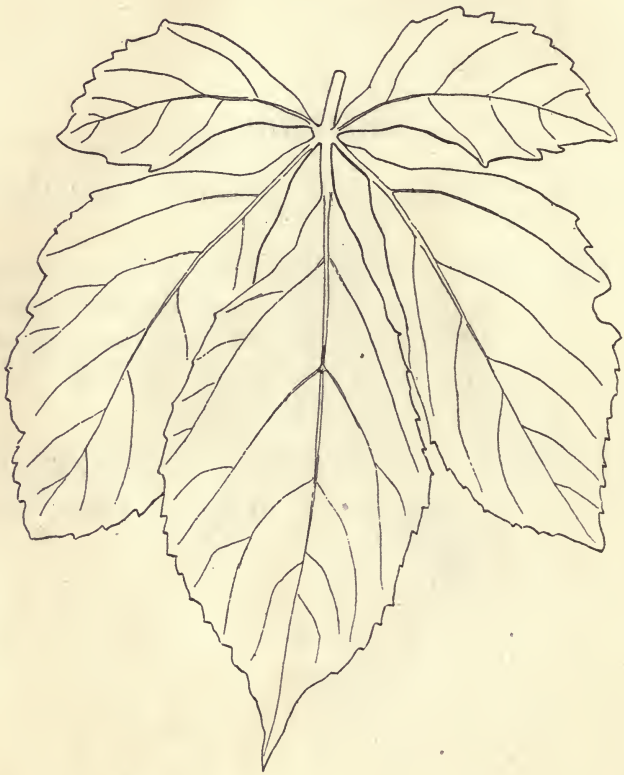
HYBRID OF V. VINIFERA, V. LABRUSCA, AND V. RIPARIA.—AMERICA.

LEAVES.—Entire, emarginate, sometimes trilobed, largely undulating, petiolar sinus **completely closed, sides of the two lobes largely overlapping.** Dark-green, often **mottled with yellow** before assuming the definitive colour.

UPPER PORTION OF GROWING SHOOT.—Yellowish.

Very young leaves, upper face **yellow,** under face **white.**

PAGNUCCI (Vitis).



Pagnucci (Vitis).

FAR EAST.

LEAVES.—**Composite,** resembling the leaves of Ampelopsis. There are two, three, or five divisions. They are sometimes entire at the base of the shoots.

PETIT-BOUSCHET (Tinto).

Petit-Bouschet (Tinto).

VITIS VINIFERA.—EUROPE.

LEAVES.—**Dull, violet-green.**

Upper face, veins more or less purple-coloured over all their length.

Under face, light white felt.

UPPER PORTION OF GROWING SHOOT.—Bronzed.

Apex whitish.

WOOD.—Often marbled with violet inside, **pith somewhat violet.**

Seen from a distance a Petit-Bouschet vine is glaringly conspicuous from surrounding cépages by its violet colour; in summer it appears as if it had been **plunged in a bath of dye.**

In autumn, the leaves of Petit-Bouschet become purple like the leaves of all European cépages bearing grapes with red-coloured juice. This purple colour partially appears on the leaves of cépages of this group during the course of the summer.

PORTUGAIS BLEU.

Portugais Bleu.

VITIS VINIFERA.—EUROPE.

LEAVES.—**Largely undulating,** shiny, **bright green, glabrous.**

UPPER PORTION OF GROWING SHOOT.—**Light-green, very shiny.**

WOOD.—At first bright green, turning later on clearly yellow before assuming the definitive colour ; bright carmine ring at the base of the buds on herbaceous shoots.

RIPARIA GLOIRE.

Riparia Gloire.

VITIS RIPARIA.*—AMERICA.

LEAVES.—**Very large, rounded,** flabby, relatively dull; parenchyma **generally curved up between the principal veins.** This latter character is especially noticeable in leaves developed at the moment when growth is in full activity.

WOOD.—Flat near the nodes; bark very thin and very smooth, hazel colour; buds very large; secondary ramifications not very numerous.

* The Vitis Riparia present the following descriptive characters :—

LEAVES.—Flat, thin, supple, cordiform-emarginate; lobes indicated by more prominent teeth, no woolly hair, stiff hair on the veins of the under face; teeth sharp.

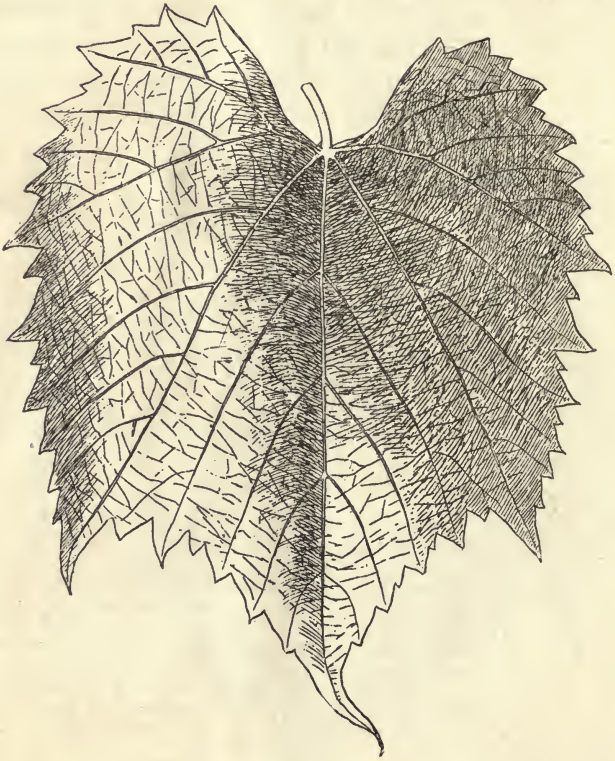
UPPER PORTION OF GROWING SHOOT.—Bent as shown in the figure, terminal bud completely enveloped by the young leaves.

Young leaves, folded along the mid-rib.

WOOD.—Cylindrical, very smooth, extremely long, growing rapidly in length. Canes of almost even diameter for the whole of their length. By simply examining the canes at their point of insertion one would not suspect the vegetation of the stump, for the canes are small in number, and their diameter is relatively small at the base; very few secondary ramifications, nodes only slightly prominent, internodes long, bark exfoliating very easily in fine strips like hemp. The wood in its herbaceous state is so smooth and glossy (except for Tomentose Riparias), and seems so supple, that it appears made of drawn or stretched indiarubber.

GRAPES.—Florescence very early, flowers generally male.

RIPARIA GRAND GLABRE.



Riparia Grand Glabre.

VITIS RIPARIA.—AMERICA.

LEAVES.—Rather small, **elongated,** thin, but not flabby, **very smooth,** often shiny, lateral margins almost parallel.

WOOD.—**Red**; secondary ramifications relatively numerous.

Grouping of Varieties of Vitis Riparia.

a. Leaves very large, flabby, rounded. Bark thin, little coloured.—Ex. Riparia Gloire.

Group No. 1.

Glabrous Riparias. Herbaceous shoots, very smooth, without stiff hair.

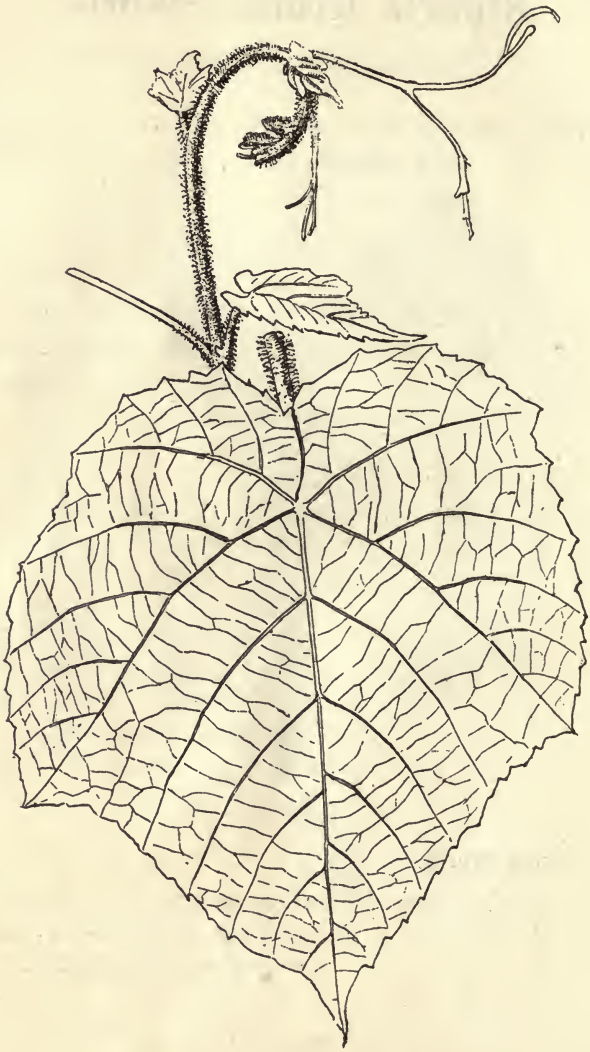
b. Leaves very large, rounded. Bark thick, strongly coloured.—Ex. Riparia violet.

c. Leaves relatively small, elongated, smooth, relatively hard although thin, shiny. Wood very red, secondary ramifications relatively numerous.—Ex. Riparia Grand Glabre.

Group No. 2.

Tomentose Riparias. Wood (non-lignified), covered with stiff short hair.—Ex. Riparia tomentose of las Sorrès.

ROMANETI (Vitis).



Romaneti (Vitis).

FAR EAST.

UPPER PORTION OF GROWING SHOOT and PETIOLE covered **with hair similar to that of the moss rose.**

ROTUNDIFOLIA (Vitis).

The dotted line indicates the shape of the petiolar sinus in certain leaves.

Rotundifolia (Vitis).

AMERICA.

LEAVES.—Small, cordiform, very smooth, shiny, parchment-like.

Petiole, **extremely long.**

BUNCH.—Very small, consisting of two or three large spherical berries, often of only a single berry.

WOOD.—Resembling that of the quince, **bark never exfoliating** as among other Vitis; **numerous lenticels** impart to the lignified wood a greyish tint; **without diaphragms.**

Tendrils, **simple.**

RUPESTRIS DU LOT.

Rupestris du Lot.

VITIS RUPESTRIS.*—AMERICA.

HABIT.—**Very erect,** the principal ramifications only spreading on the ground.

LEAVES.—**Very slightly folded along the mid-rib,** margins undulating, shiny, light metallic reflection, relatively thin, the square shape, as it were, is broken by the tooth forming the terminal lobe.

Petiolar sinus, **bracket shaped.**

WOOD.—Hazel colour, knotty, much ramified.

The Rupestris du Lot has only male flowers. This character enables it to be distinguished from certain Rupestris which have leaves of almost the same shape, but which are fertile. It never has phylloxera galls on the leaves. This is the only American vine, like the European vines, which completely resists the formation of galls resulting from the puncture, by phylloxera, of the herbaceous organs. The leaves on extreme ramifications are greatly reduced in size. Under the influence of excessive drought, the leaves of Rupestris du Lot become strongly folded along the mid-rib, and lose their metallic lustre.

* The Vitis Rupestris present the following descriptive characters :—

HABIT.—Bushy, secondary ramifications short and very numerous.

LEAVES.—Generally small, often wider than long, folded along the mid-rib, parchment-like, shiny, very glabrous, never with stiff hair on the ridge of veins of the under face, sub-veins transparent, sunk in the limb.

UPPER PORTION OF GROWING SHOOT.—Terminal bud scarcely completely enveloped by the young leaves. Young leaves very shiny and transparent.

BUDDING.—Carmine. Young grapes protruding from young leaves, deep carmine.

WOOD.—Knotty, internodes short.

RUPESTRIS MARTIN.

Leaf natural size. The above is a large leaf.

Rupestris Martin.

VITIS RUPESTRIS.—AMERICA.

LEAVES.—Cordiform, thick, deep green, **wrinkly at the centre,*** irregularly folded along the mid-rib; margins of the leaf **largely undulating** and curled up.

Petiolar sinus V shape.

Teeth **very large and much rounded.**

WOOD.—**Very sinuous.**

Grouping of Varieties of Vitis Rupestris.

Group No. 1.

Margins of leaves very slightly undulating, regularly folded along the mid-rib, generally small. General colour yellowish-green. Habit very bushy.—Ex. Rupestris Ganzin.

Group No. 2.

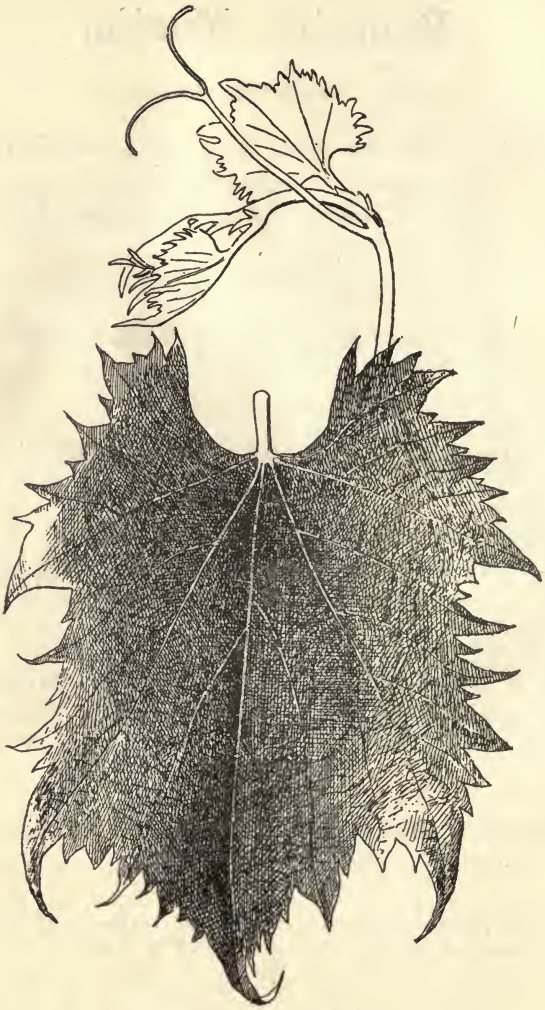
Leaves slightly folded along the mid-rib, margins undulating; petiolar sinus bracket shaped.—Ex. Rupestris du Lot.

Group No. 3.

Leaves with dark metallic reflection, rather large. Habit rather spreading.—Ex. Rupestris Martin.

* This character is particularly noticeable in leaves of the principal ramifications, and which are consequently of large size.

SOLONIS.



Solonis.

HYBRID OF V. VINIFERA, V. CANDICANS, AND V. RUPESTRIS. —AMERICA.

GENERAL ASPECT.—**Green, greyish, shiny.**

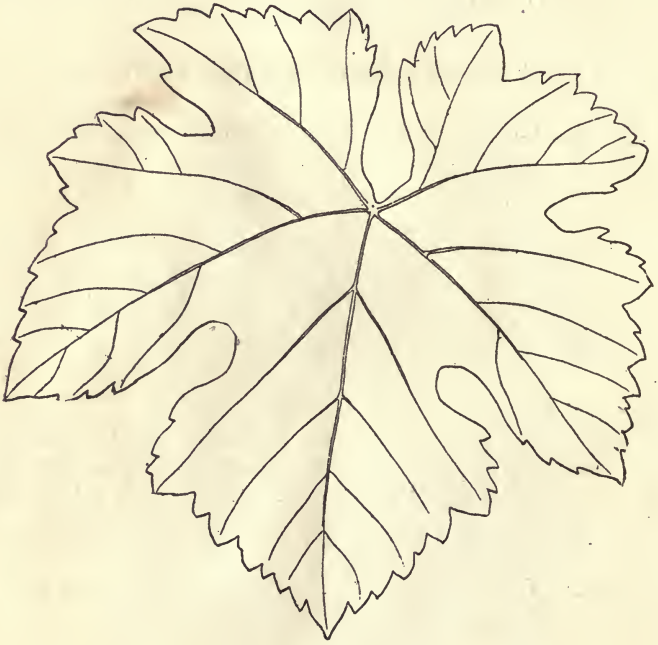
LEAVES.—Rather shiny, slightly folded along the mid-rib; the mid-rib describes a rather regular curve. Woolly hair, scarce and patchy.

Teeth **very long, sharp, recurving, divergent,** the tooth forming the terminal lobe and the two teeth forming the lateral inferior lobes curling underneath and generally converging towards the same point.

UPPER PORTION OF GROWING SHOOT.—**Young leaves completely enveloping the terminal bud.** White woolly hair forming a loose felt on the apex and giving it a greyish colour.

WOOD.—After lignification blackish, with patches of woolly hair.

SYRAH (Shiraz).



Syrah (Shiraz).

VITIS VINIFERA.—EUROPE.

LEAVES.—Generally a little wider than long, slightly undulating, thin, inferior sinuses **wide and deep.**

Upper face, tufts of loose hair.

Under face, very white light felt.

UPPER PORTION OF GROWING SHOOT.—Covered with **white woolly felt.**

BERRIES.—Ovoid.

TAYLOR.

The dotted line shows the indentation of certain leaves.

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Taylor.

HYBRID OF V. RIPARIA AND V. LABRUSCA.—AMERICA.

LEAVES.—Stiff, hard, generally wrinkled between the veins, **folded conically,** sometimes folded along the mid-rib.

Under face, ridge of veins **perfectly glabrous;** the two main superior veins always **violet-coloured,** between their point of insertion and their first division.

UPPER PORTION OF GROWING SHOOT.—Slightly bent, **light-green, very glabrous,** without a trace of pink or violet colouration. Very young leaves folded along the mid-rib, but only slightly enclosing the terminal bud.

VIALLA.

Vialla.

HYBRID OF V. RIPARIA AND V. LABRUSCA.*

LEAVES.—**Very large, entire,** rounded, emarginate, dark-green, rather **plane.**

UPPER PORTION OF GROWING SHOOT.—Bent.

Very young leaves **folded along the mid-rib,** but never quite completely enveloping the terminal bud.

Under face, uniformly **white carmine** with green veins.

TENDRILS.—**Frequently continuous.**

* The Vialla was obtained in France. This cépage originated from a Clinton seed.

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